

Amendments to and Listing of the Claims

Please amend claim 1 so that the claim reads as follows:

1. (Currently Amended) A fluid treating method comprising the steps of:

(a) forming a ring lamination by laminating a plurality of filtering rings with contact surfaces facing each other in a laminating direction, each filtering ring comprising a non-porous metal plate having a central hole therein, the hole extending through the plate in the lamination direction, and each filtering ring having an inner periphery being convexly curved in a radially inward direction and an outer periphery having a wedge shape converging in a radially outward direction;

(b) providing at least portions of the contact surfaces of the filtering rings facing each other with a contact surface roughness (Ra) in a range of about 0.01 μm to 20 μm ;

(c) pressing the ring lamination under a contact surface pressure (p) in a range of about 0 to 177 kg/cm^2 in the laminating direction of the filtering rings to cause the contact surfaces to closely adhere to each other, wherein a gap distance (g) between the portions of the filtering rings closely adhering to and facing each other is in a range of about 0.2 nm to 200 μm ;

(d) directing an object fluid into an interior of the ring lamination via the central holes of the filtering rings, such that the object fluid enters radially outwardly into gaps formed by contact surfaces of adjacent filtering rings of the ring lamination;

(e) dividing the object fluid into a first separated fraction comprising solids and a second separated fraction comprising a fluid, such that the second separated fraction flows through the gaps for removal from an exterior of the ring lamination, while the first separated fraction accumulates on the inner periphery of the filtering rings; and

(f) scraping the inner periphery of the filtering rings to remove the solids of the accumulated first separated fraction.

2. (Cancelled)

3. (Original) The fluid treating method according to claim 1, wherein the filtering rings comprise a magnetic material.

4. (Previously Presented) The fluid treating method according to claim 1, further comprising a step of controlling accuracy and/or speed of the division and separation of the object fluid into the first separated fraction and the second separated fraction by adjusting a pressure difference $\Delta P = P1 - P2$ between a supply pressure P1 of the object fluid acting on an inlet area of the ring lamination and a suction pressure P2 acting on an exit area of the ring lamination.

5. (Previously Presented) The fluid treating method according to claim 4, further comprising the steps of: causing the suction pressure acting on the exit area of the ring lamination to act in a reverse direction in an initial stage of operation, and pressing the object fluid radially into the ring lamination by the reverse suction pressure acting on the exit area of the ring lamination and the supply pressure of the object fluid acting on the inlet area of the ring lamination.

6. (Previously Presented) A fluid treating apparatus for dividing an object fluid into a first separated fraction and a second separated fraction and removing these fractions, comprising:

a long and thin cylindrical housing;

a ring lamination formed by laminating a plurality of filtering rings facing each other, each filtering ring comprising a non-porous metal plate having a central hole therein, the hole extending through the plate in the lamination direction, and each filtering ring having an inner periphery being convexly curved in a radially inward direction and an outer periphery having a wedge shape converging in a radially outward direction;

a ring press for acting on the ring lamination to cause the filtering rings to closely adhere to each other under a pressure in a range of about 0 to 177 kg/cm², wherein a gap distance (g) between contact portions of the filtering rings adhering to and facing each other is in a range of about 0.2 nm to 200 μ m;

an object fluid supply for feeding the object fluid to an interior of the ring lamination;

an object fluid pressure source for impressing a prescribed pressure onto the object fluid supplied to the ring lamination in cooperation with the object fluid supply; and

a stripper arranged in a center hole in the ring lamination to remove one of the first and second fractions from the ring lamination.

7. (Original) The fluid treating apparatus according to claim 6, wherein the object fluid pressure source is a pump or a gate valve.

8-10. (Cancelled)

11. (Original) The fluid treating apparatus according to claim 6, wherein the filtering rings comprise a magnetic material.

12. (Cancelled)

13. (Previously Presented) The fluid treating apparatus according to claim 6, wherein the stripper is a rotary brush for removing separated solids adhering to an inner peripheral portion of the ring lamination.

14. (Previously Presented) The fluid treating apparatus according to claim 6, further comprising a ring lamination holder arranged in the housing, the holder having a plurality of openings and having the ring lamination arranged in an interior of the holder.